

Patent Abstracts of Japan

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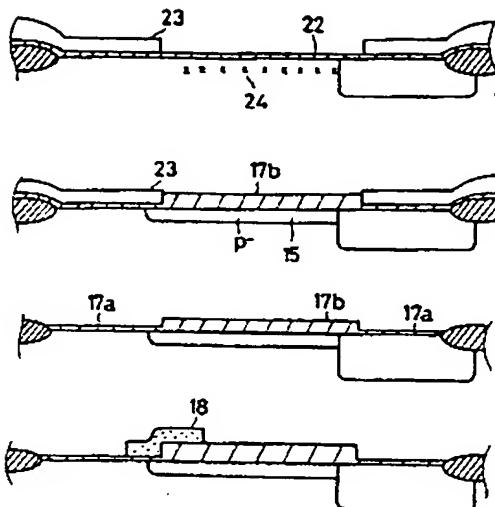
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TITLE : HIGH BREAKDOWN STRENGTH MOS
 TRANSISTOR AND MANUFACTURE
 THEREOF



ABSTRACT : PURPOSE: To relieve the intensity of electric field applied to a gate edge by making a gate oxide film between source and drain electrodes thick on a low concentrated diffusion region and forming a gate electrode so that it extends from a thin region to a thick region of the gate oxide film.

CONSTITUTION: After forming a buffer SiO_2 film 22, a silicon nitride film 23 is deposited and patterning is performed so that an opening is made at a region in which a low concentrated diffusion region is formed by photolithography and etching. Ion implantation of phosphorus or arsenic 24 is performed at a low concentration by using a patterned silicon nitride film 23 as a mask. Further, selective oxidation is performed and the gate oxide film 17b having a thick film is formed to the thickness of the order of 1000 \AA . Then, implanted ions become active and the low concentrated diffusion region 15 is formed. After removing the silicon nitride film 23 and the buffer SiO_2 film 22 located below the film 23, a thin gate oxide film 17a is formed to the thickness of the order of 500 \AA . A polysilicon layer is deposited and then, a gate electrode 18 is formed by patterning the above layer by photolithography and etching.

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